

# PCSE: General Remarks

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**PCSE**

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# What we teach

## Introduction

- What is parallel computing?
- Why do we do parallel computing?

## MPI

- Distributed memory architecture, aka. 'a cluster'

## OpenMP

- Multithreading on a shared-memory architecture

## Special topics

- TBD

# The most important things you can do

Participate in class

Ask questions

Make the class interactive

Make this class a success for all of us!

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## Help each other

- You current knowledge differs a lot
- No better grades by demonstrating that you are ahead
- Standard rules for quizzes, home works, etc. apply!
- Help others: you will experience how much you will learn by explaining 'stuff' to others
- We will use slack for communication
- A github repo will be used to distribute class materials

# Grading

Current plans:

- MPI: 30%, assignments throughout the course
- OpenMP: 30%, 1 quiz, homework assignment throughout the course
- Theory: 10%, homework
- Project: 30%

# We will try to accommodate you

Focus your project on your actual research

- Parallelize your research code
- Pick something you are interested in
- We will discuss details later

Let us know what is of interest to you

- Of course, within the confines of the general topic

Detailed instructions to come

# Resources

TACC offers many resources, we will use our current flagship Frontera

We will teach how to logon, compile, submit a job, and how to start an interactive session etc.

# What we do not teach (in great detail)

## General use of a computer (HPC = Linux)

- Intro to Unix/Linux
  - We may discuss shortly a list of the ‘ten most important’ commands
- Intro to Editor
  - Join the UNIX world
  - It is either ‘vi’ or ‘emacs’ (that’s really a bad list of choices)
- Find a tutorial online if you start at ‘zero’
- Ask your fellow students for help!

We do this for a good reason

There are so many more interesting things to learn

And TACC provides other classes for this



# Outline for today

- Technical details (these slides)
- 'Intro to Parallel Computing'

Slides will be available on github

[github.com/TACC/sds374394spring2023](https://github.com/TACC/sds374394spring2023)